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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/824,903      | 04/02/2001  | Kevin R. Hudson      | 10004101-1          | 2179             |

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EXAMINER

PHAM, THIERRY L

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/824,903             | HUDSON, KEVIN R.    |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Thierry L Pham         | 2624                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) 1 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/25/01.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claim 1 is objected to because of the following informalities: Claim 1, lines 4-5, "normalize an output of at least one non-least dynamic printer in the cluster" is unclear and the examiner suggests applicant to recite such limitations in a better form. Appropriate correction is required.
  
2. Applicant is advised that should claim 2 be found allowable, claim 3 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 12-13, 15-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin (U.S. 6404511).

Regarding claim 1, Lin discloses a method for calculating look-up tables (LUT, fig. 6) for a cluster of printers (clustered printers 30a-30c, fig. 1), comprising:

- (1) determining a least dynamic printer (non-reference printers, abstract, cols. 9-11) in the cluster; and

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(2) calculating corrected input values (calculating input values from input device 10, fig. 1, cols. 9-11) required to normalize an output (normalized by transfer functions, fig. 7) of at least one non-least dynamic printer in the cluster (reference printers, fig. 1 and cols. 9-11).

Regarding claims 2-4, Lin further discloses the method of claim 1, wherein transfer functions are calculated for each primary color (fig. 7, abstract and col. 10, lines 44-60).

Regarding claim 5, Lin further discloses the method of claim 1, additionally comprising calculating transfer functions for each printer in the cluster (col. 12, lines 3-67).

Regarding claim 6, Lin further discloses the method of claim 1, additionally comprising organizing the corrected input values into look-up tables (LUT, cols. 9-11).

Regarding claim 7, Lin further discloses a method for calibrating a cluster of printers, comprising:

- (a) printing a calibration target (calibration sheets, col. 10, lines 1-10) with each printer in the cluster;
- (b) measuring (measure device 60, fig. 3, col. 6, lines 49-67) each calibration target to produce measurement data;
- (c) calculating transfer functions (transfer functions, fig. 7) for each printer in the cluster;
- (d) determining a least dynamic (non-reference printers, cols. 9-11) printer in the cluster;
- (e) calculating corrected input values (calculating input values from input device 10, fig. 1, cols. 9-11) required to normalize (normalized by transfer functions, fig. 7) output of non-least dynamic printers in the cluster;
- (f) organizing the corrected input values into look-up tables (LUT, cols. 9-11); and
- (g) sending (figs. 6-7) the look-up tables to each printer within the cluster.

Regarding claim 8, Lin further discloses the method of claim 7, wherein the measuring is performed by sensors (measure device, fig. 3b) in a paper path of each printer.

Regarding claim 9, Lin further discloses the method of claim 7, wherein the measurement data is expressed in a CIELab (CIELab, col. 11, lines 1-20) context.

Regarding claim 12, Lin further discloses the method of claim 7, additionally comprising incorporating the look-up tables (LUT, cols. 9-11) into a color data flow of each printer (fig. 7) in the cluster.

Regarding claim 13, Lin further discloses a method of calibrating (abstract) a cluster of printers, comprising: printing a calibration target (fig. 6) with each printer in the cluster; measuring (measure device, fig. 3b) each calibration target to produce measurement data; calculating transfer functions (transfer functions, fig. 7) for each primary color and for each printer in the cluster; determining a least dynamic printer (cols. 9-11) in the cluster with respect to each primary color; calculating corrected input values required to normalize (normalized by transfer functions, fig. 7) output of non-least dynamic printers in the cluster to the least dynamic printer in each cluster with respect to each primary color; organizing the corrected input values into look-up tables (LUT, cols. 9-11); and sending (figs. 6-7) the look-up tables to each printer within the cluster for inclusion in a color data flow.

Regarding claim 15, Lin further discloses a cluster of printers, comprising:  
at least two printers (output devices fig. 1); a transfer function (transfer function, fig. 7) calculator to derive a transfer function for each printer with respect to at least one color; a least dynamic response selector (control unit, fig. 2) to determine a least dynamic printer from within the cluster of printers for at least one color; a normalizer (normalized by transfer functions, fig. 7) for calculation of corrected input values required to normalize more dynamic printers output with respect to the least dynamic printer; and a look-up table(LUT, cols. 9-11) assembler to organize the corrected input values into look-up tables.

Regarding claim 16, Lin further discloses the method of claim 15, additionally comprising a file transfer routine (transfer via communication bus, fig. 1 and fig. 4) to send the look-up tables to each printer within the cluster of printers.

Claims 17-19 correspond to claims 7-12 and/or combination thereof except computer readable memory medium for storing program is claimed rather than printing system/method or data output apparatus. All computers have some type of computer readable memory medium (storage device, fig. 2) for storing computer programs, hence claims 17-19 would be rejected using the same rationale as in claims 7-12.

Regarding claims 20-21 recite limitations that are similar and in the same scope of invention as to those in claims 15-16 above; therefore, claims 20-21 are rejected for the same rejection rationale/basis as described in claims 15-16.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10-11, 14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin as described in claims 7, 13, and/or 20 above, and in view of Ikeda et al (U.S. 6172771).

Regarding claim 10-11 and 22, Lin does not expressly disclose the calculating steps can be performed either on a master printer and/or print server.

Ikeda, in the same field of endeavor for printer's calibration, teaches calculating steps can be performed either on a master printer and/or print server (calibration can be performed either on a printer itself or via a printer server, fig. 6-8, 12, col. 5-6 and col. 10, lines 1-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Lin as per teachings of Ikeda because of a following reason: (1) calibration system can be incorporated either in printer itself and/or via a printer server; therefore, provides

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more flexibility/portability for the users/operators; (2) to reduce the differences (i.e. gradation characteristics) of outputted images produced by multiple printers (col. 6, lines 5-67).

Therefore, it would have been obvious to combine Lin with Ikeda to obtain the invention as specified in claim 10-11.

Regarding claim 14, Ikeda further discloses wherein the measuring is performed by sensors in a paper path of each printer (fig. 7, col. 6-7).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents/publications are relevant to applicant's disclosure invention.

a. U.S. 6256111 to Rijavec, teaches a method of calibrating a printing system within a clustered environment.

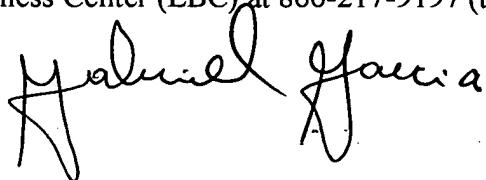
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L Pham whose telephone number is (703) 305-1897. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on (703)308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham

TP



GABRIEL GARCIA  
PRIMARY EXAMINER